Environmental Restoration Contractor **ERC Team**

Meeting Minutes

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SUBJECT GW/VZ INTEGRATION PROJECT WEEKLY MEETING - AUGUST 3, 1998

TO Distribution

FROM Michael J. Graham, GW/VZ Project Manager

DATE August 5, 1998

ATTENDEES	DISTRIBUTION
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THE GW/VZ WEEKLY MEETING FOR AUGUST 10, 1998, IS BEING SUPERSEDED BY THE DWP REVIEW MEETINGS ON THAT SAME DAY -- AGENDA ATTACHED. (LOCATION OF MEETING: BECHTEL HANFORD ASSEMBLY ROOM, 3350 GEORGE WASHINGTON WAY, RICHLAND, WASHINGTON)

DUE TO CONFLICTS IN SCHEDULE WITH KEY TEAM LEADERS, THE NATIONAL LAB MEETINGS FOR AUGUST 12-13 HAVE BEEN POSTPONED TO AUGUST 25-26.

NEXT GW/VZ INTEGRATION PROJECT WEEKLY MEETING:
Date: August 17, 1998
Location: PNNL ETB Columbia River Room
Local Call In Number: (509) 376-7411
Toll Free Call In Number: (800) 664-0771

MEETING MINUTES:
A Groundwater/Vadose Zone Integration (GW/VZ) Project Weekly Meeting was held on August 3, 1998, in Richland, Washington, at the PNNL ETB Columbia River Room.

OPPORTUNITIES FOR PROJECT PARTICIPATION:

August 10-11 DWP Review Meetings -- The ER contractors set the week of August 11 for DWP Reviews. We added the Groundwater/Vadose Zone Integration Project to those meetings and that is why they are occurring in this time frame.

August 12-13 National Lab Meetings Postponed until August 25-26.

August 13 HAB-ER Committee - The agenda has not yet been finalized, therefore, we are not sure of the time we will be on the schedule. We will be giving a 2-hour Presentation on the Groundwater/Vadose Zone Integration Project.

(Update Note: The HAB agenda includes a half day discusion of the project -- Agenda Attached)

August 25-26 National Lab Meetings on Hanford Groundwater/Vadose Zone Science and Technology Needs, Program Planning, and Roadmapping. Discussions and breakout sessions will include: Contaminant Inventory, Vadose Zone, Geochemistry, Groundwater, and Columbia River. Location and times are yet to be determined. For more information contact Shirley Rawson, (509) 376-0223

EXPERT PANEL:

We have heard back from Under Secretary Moniz on the selection of members for the Expert Panel. The panel will consist of eight members and we are in the process of contacting them and getting confirmation that they are willing to serve. Until we are able to contact each member we are reluctant to publish the names because it would be inappropriate to hear that they were selected to be a member of the panel from the media or other sources rather than DOE-RL and the GW/VZ Project personally. In our initial contacts there are a few members who may be on vacation. Please bear with us as we go through this process of notification.

QUESTION: In the meetings from July 20, 1998, there is a statement that certain stakeholders have interceded in the expert panel selection process to express disapproval of some candidates. I find that statement disturbing because if that is true then the process of selection has been badly contaminated. If blackballing is part of the process then the need for a panel just isn't there and I move that we abandon the panel. The idea was to have an entirely impartial selection process. Who was given permission to blackball any particular candidate?

ANSWER: The statement in the meeting minutes may be misleading. When we had the candidates provided by the universities we asked all interested parties to inform us if there was a concern with anyone on the list.

COMMENT: This feels like one more layer where you are shutting the stakeholders out of the process.

COMMENT: You have the stakeholders looking over your shoulders. They can say if we need panel to come in and look at something, you don't need a standing committee to play that role.

RESPONSE: We need the panel to provide direction on this project. Without it we jeopardize confidence in the work going forward.

GROUNDWATER SUB-PANEL:

We need to select a small three person panel to provide support to the Groundwater Project. In an ideal world the expert panel would have been in place to help, but they aren't, so we are proceeding to select three people from the list of 100+ with expertise in Groundwater Modeling. The scope of this effort was planned last year by

the Groundwater Project. When the GW/VZ Project started, the task of setting in place a Groundwater Panel was handed off to us.

In Groundwater Modeling there are a number of competing models and alternatives. We need help on which model to select. Conceptualization of the site will be an on-going issue over the years and we need a recommendation from an external review of the process. The Groundwater Program planned to bring in a panel. It just makes sense to use the new Expert Panel protocol and administrative aspects that we now have in place. If we don't make a selection on a Groundwater Panel soon the Groundwater Project will lose momentum.

We took the list of 100+ names and looked for people with modeling and hydrology expertise. Because of availability, we have narrowed that list down to six. The plan is to have the senior hydrologist out of Bechtel National, Inc. make a selection of three panel members from this list of six. If there are any other names you would like to have added please let us know. Keep in mind that we are behind schedule and that the sub-panels (such as the Groundwater Panel) are not permanent panels.

COMMENT: If this is a technical issue, bring the panel, get their opinions and then go on to the next problem.

QUESTION: What is the hole you are in and what is the impact it will have on the Groundwater Panel? What would happen if you don't have this panel?

ANSWER: Not long ago Mike Thompson went to the Site Management Board and made a pitch that Hanford is producing different groundwater models based on different assumptions. This process is confusing and projects are going off in different direction. It was presented that we needed a site-wide standard and to do that we needed to bring in outside expertise to help with the difference in opinions on technical issues. Work is proceeding with groundwater models and we need this panel to assist us.

ANSWER: The scope of the review is to determine the following: Is the conceptual model and technical capabilities embodied in the numerical implementation of the proposed site-wide groundwater model adequate to meet the anticipated needs? Are there major conceptual model, parameter, and data uncertainties that can and should be resolved by collection of additional data and information in order for the proposed model to be adequate for the Hanford Site needs, requirements and uses?

QUESTION: So this would be how to go from a code to a model?

ANSWER: Yes, and we would like to make a Groundwater Panel selections by the end of the week.

COMMENT: The Yakima Indian Nation has been involved in discussion regarding this need and there have been presentations to the HAB. The groups are aware of the sub-panel and are involved in the situation and support it.

RESPONSE: When Michael Graham first came on board with this Project, before understanding how sensitive some of the issues can be, a commitment was made that the Project would take on this task. It is a responsible approach to have an independent person from Bechtel National make the selection of the panel. Is there another way?

QUESTION: Are you looking for a blessing or some insight into geohydrology people?

ANSWER: We are looking for a panel that can look at our hypothesis and give a review on whether we have chosen the right code and have adequate data.

QUESTION: The task is more a review, approval and critique instead of creation of new information?

ANSWER: Correct. The model has been around for a number of years and their role is to give a critique.

COMMENT: Don't personally know all these names, but on the list of candidates there is only one person with vadose zone flow and transport experience.

RESPONSE: This is not vadose zone but rather groundwater saturation and flow.

QUESTION: Would this panel eventually fall under the larger project panel?

ANSWER: It is anticipated that the Groundwater Panel would be able to complete its scope in two meetings. The GW/VZ Expert Panel will deal with issues on a larger picture. This is a specific small chunk.

COMMENT: But down the path they need to tie in.

RESPONSE: It will tie back with the national labs and the Expert Panel.

COMMENT: I thought there were some United State Geological Survey (USGS) candidates for consideration.

RESPONSE: Tony Knepp will check on the USGS. (NOTE: Have identified and added an individual from the USGS and will make contact to see whether or not he would be available.)

COMMENT: One of the things you may have addressed is the issue around uncertainty in the conceptual model. I'm not sure if we are looking at coupled transport. (Coupled into a transport model, water moving through a flow mechanism.) We need a combined model that we all agree to. There is uncertainty on how accurately we know what we now know. We need some idea of what the numbers are telling us and what our assumptions are going in. Post 100 years we can't rely on the assumption that we won't have people farming on the Site, because that may change. We need to keep in mind that the details may be uninformative in looking at the programmatic.

We need to know if anyone is going to forward any more names to be considered for the Groundwater Panel. We would like to close off any additional names by Friday. We could wait, but would prefer to move forward by that date.

COMMENT: Dirk Dunning will give a call to a couple of people to see if they have any additional names to add.

COMMENT: What about Mary Anderson?

RESPONSE: Mary has declined, she is on sabbatical.

NATIONAL LABS:
Attached to the agenda for today is the National Laboratory Technical Meeting Minutes from July 16-17 and July 22-23. (A copy will be attached to today's meeting minutes.) If you would like to have copies of all the attachments referred to in these minutes, please call Karen Strickland at 509-372-9236.

DRAFT PROJECT SPECIFICATION DOCUMENT:
We would like to have a general walk-through of the Draft Project Specification Document. The review period is from today, August 3, 1998 to September 4, 1998. We need your comments so that we can make revisions this fiscal year. For those who are not in attendance today to get a copy of the document, it will be available on the Internet at the Groundwater/Vadose Zone Web Site (http://www.bhi-erc.com/vadose).

The purpose of the Project Specification is not to provide a detailed specification of everything we are doing. It is a high level document on the mission, objectives, scope and general requirements for the Project. The Project Specification is a framing document. As you review the Detailed Work Plan you will see that each year we will loop back and do a revision to the Project Specification. The Project Specification is to make sure that we have agreement on what the scope and requirements of the job are. The details of the work are found in the DWP.

We would like today to be an interactive discussion of what we have, with a quick run through of the document and emphasis of some key areas you should read.

Probably the most important chapter in the documents is Chapter #5 and includes a strategic approach. What the Project covers is from inventory to the Columbia River.

COMMENT: The diagram doesn't show receptors.

RESPONSE: The technical elements includes receptors within the scope. The title of the technical elements is open for discussion. Read the document and you will see it all in words.

COMMENT: I am troubled by the diagram that was just shown which talked about a system model and I don't see uncertainty assessment.

RESPONSE: Uncertainty is clearly involved in risk assessment. First, how you address uncertainty is key to doing an assessment. It is scheduled in the DWP for the fall. Second is risk assessment and how you approach it.

COMMENT: An uncertainty assessment will go a long way to address some concerns you are hearing.

COMMENT: On risk assessment, on one hand is to deal with cancer and deformed clams, another is to deal with more subtle cultural and economic things that haven't been defined but must be worked in.

RESPONSE: Agreed. Those are all parts and pieces that need to be addressed and are two things that are key elements of risk and uncertainty. If we can show it is covered, then later we can address how it is going to be done.

QUESTION: Under risk assessment, are you looking at current conditions or potential, future impacts?

ANSWER: Our focus is future, but you must look at the existing and the past.

QUESTION: I see future on your diagram, but I don't see present -- need to reflect current and going forward.

ANSWER: Our intent is that we will cover current and forward.

As stated before, Chapter 5 is one of the most important in the document and covers the Project Planning Approach. On the far left of Figure 5-1 you have the Project Definition, the vision, mission, goals, scope, strategy and requirements. In the middle is the deficiencies assessment; what is missing in the program.

COMMENT: The way I was brought up, when you do a technical or planning approach you have a mission accomplishment. On this diagram I don't see an inference that it ties back to the mission.

RESPONSE: You're right. We will provide a box that shows the review process going back to the mission to complete the annual revision process. We have changed the mission from protect to ensure. The other thing that is different is that the DWP is a contract to do work, therefore, it isn't a typical project plan. In the Groundwater/Vadose Zone Integration Project the DWP is an executable plan. Our job intends to ensure that the work gets done and fits the mission of this particular job.

On the far right is work scope development where you compare deficiency assessment results with on-going work and prioritize the results. For the things that we will be doing in the future, we will look at all the project and the things that need to be done, things defined by the panel, technical needs and define what is missing, that is where we will define the heart of the job. Every thing after that is implementation.

If you have any questions or comments, please contact Tony Knepp (509-372-9189) or Bruce Ford (509-372-9176) or Michael Graham (509-372-9179). As mentioned before, we have a 30-day comment period until September 4, 1998. The sooner we receive comments the quicker we can make the necessary changes.

QUESTION: Are the groundwater experts going to fit into the deficiency role that is being planned?

ANSWER: Yes, if they tell me that the fault is wrong then it will become a gap.

COMMENT: On page D-39, I can't distinguish between the two greens.

RESPONSE: Yes, we recognized that and already made a request to have the colors corrected.

COMMENT: On the last page in Appendix E is states that applicable CRCIA requirements and documents will be made available for Rev. 0. I would hope that you mean Draft B not Rev. 0.

DETAILED WORK PLAN:

We ask for your indulgence and support to get through the next couple of weeks. There is a lot going on. We have heard early on that if we are going to impact the 1999 Budget we need to get some things in place. Next week we will have people from DOE-Headquarters here for a walk-through of this Project and core projects we are working with. Our first pass through is going to be rough, this Project isn't a typical project. One thing we don't have is the baseline. We are going to get to that bigger picture early in the next calendar year. We have heard it called the master plan, the strategic plan, and the baseline. The idea is to take the work of the National Labs and the effort of the Project in their planning to identify deficiencies and prioritize. The concept is to develop a strategic plan which will lay out the milestones of what we are trying to accomplish and when we are trying to accomplish it.

We must look at this from a site-wide perspective. Getting the Detailed Work Plan (DWP) in hand is how we are going to put it all together. The other thing that must be carefully worked is the regulatory path forward. Everything on site is in individual pockets with agreements done from a project specific perspective. We have a meeting tomorrow with Ecology to dialog on these issues. Both Ecology and EPA will sit at the table with us during the review of the DWP.

Another thing we have been trying to work on is assembling the gaps that have been identified. Tom Wintczak has identified 117 gaps. The difficulty now is, in order to do anything with them, we need to have a tool to look at the whole system. We need the DWP to turn the light on.

The Work Breakdown Structure: Phase II was Implementation of the Groundwater/Vadose Zone Project for FY98. Phase III Implementation is next year where we plan and develop the System Assessment Capability and the Numerical Analytical Capability. We aren't proposing any other new activities next year.

QUESTION: At the moment, under this project, there will not be any new drilling?

ANSWER: There are plans for drilling in other projects, but none under this project.

QUESTION: So there is money for drilling in other ER Projects, the 200 Area land fills?

COMMENT: I would think you would want to put placeholders for that money since the National Labs have identified a need for new drilling.

QUESTION: What about Z-Cribs and TX Tank Cribs?

QUESTION: Will those drillings be in other projects for next year?

ANSWER: Next Monday and Tuesday we will review what the different groups have planned. When we are finished reviewing we can say that it looks like things are missing. That is the circle we are going to be caught in until we lay out future work.

QUESTION: Why are we trapped if the funds haven't yet been approved.

COMMENT: If we have additional needs that haven't been identified, then they need to be forwarded to The President and Congress.

RESPONSE: When a shortfall is identified it is given to the Secretary who will decide what to do with the shortfall. You have to determine if you are short on money or if the money is not in the right places. Wagoner has already identified the shortfall here at Hanford. All sites have identified shortfalls and DOE is struggling to prove our point with Congress. In preparing for 2000, Betsy Moeller has said that the target funds for O&D are insufficient and inadequate and has encouraged EM to forward with a request for more dollars.

COMMENT: The sense I am getting is not a case of shortfall of money but a sense of priorities and that this project hasn't made it to the top of the list of Hanford priorities. The shortfall I see is putting this project too far down on the list.

RESPONSE: That is part of the review process and why we need the regulators to help us jointly meet the regulatory requirements. We need to work as a unit. We know that Hanford has more work than they have dollars for. When we open the book with the DWP we will see where the dollars are and can better determine if there is a better way to approach deficiencies and look for waste.

COMMENT: I want to make sure that you understand that I am going to tell my management at Ecology that I have a concern on how this project will be funded.

RESPONSE: For FY99 and FY00 it will be a struggle for all of us. We need to get down on paper the shortfalls so they can have the proper attention. This project has oversight by DOE-Headquarters and Dr. Moniz. He needs to see the whole picture so he can see how many dollars he needs to fight for.

COMMENT: We have an idea of how important this project is in driving decisions, to not have adequate funding just doesn't cut it. Ecology will have to take the right enforcement if DOE doesn't "belly up to the bar" on this issue.

RESPONSE: Keep in mind that TWRS doesn't have guidance for next year. We will be working in TWRS relative to Vadose Characterization and Tank Farm and Expert Panel recommendations. It was anticipated that this job was taking people thoughts and working with them. The problem is everything right now is dynamic. Things aren't going together real smooth right now. Another thing we need is an agreed upon strategy with EPA and Ecology for the waste sites. We can't change the tactics without working the strategy in advance. Keep in mind there are a lot of things that need to be worked.

COMMENT: The 200 Area Strategy will have to change to coordinate with what this project is doing.

COMMENT: We recognize the strategy doesn't include everything that needs to be done.

RESPONSE: Once again, one of the things this project has to be about is discipline and setting a higher bar in executing work. In the bigger picture of things we must determine what are the critical things we have to go after that aren't being done.

COMMENT: In the absence of a System Assessment Capability everyone is working in the dark and we are going on best guesses. Trying to prioritize at this stage is ridiculous. There are some things we know are important. In this situation the best you can hope for is to sort of set priorities and define what needs to be done. If we can't get through the IPL rationally to properly fund this effort to do the priorities, then necessarily things are going to have to be stopped elsewhere. We can do that as a team, or we can externally do things to stop activities. Our patience is running out.

QUESTION: Are you talking about setting aside TPA commitments?

ANSWER: There is some agreement on that.

QUESTION: Is the Strategic Plan a unified story or a range of information as we know it?

ANSWER: We are accelerating working on the System Assessment right now with Charlie Kincaid of PNNL leading the charge to plan the development of the detailed requirements documents which will build on CRCIA and the composite analysis.

QUESTION: Is there a serious dose response module in the plan?

ANSWER: Yes.

COMMENT: That doesn't sound like Charlie's area.

RESPONSE: He will have other people assisting him.

The integration of the core projects is to capture in one book all that is planned for the next three years in the groundwater and vadose zone and to use the best resources on sight. New work is a blank tree that will be filled as we sponsor new work on inventory, dose response, cultural impacts.

QUESTION: Is the TWRS stuff on the Detailed Work Plan? Are these the actual costs accounts for working under this project?

ANSWER: They are double booked. (Appear in GW/VZ DWP and TWRS MYWP.)

COMMENT: One the first sheets where you have the WBS/ADS it would help a lot if it also carried the PBS number.

QUESTION: How long is the comment process?

ANSWER: We would like to have as many as we can next week during our meetings on Monday.

QUESTION: Where would the work be for identification and mass balance on source term.

ANSWER: You can find it in a couple of places. First, in work we are starting this year, inventory modules accelerated this fiscal year, and second, in terms of what comes out of the inventory team on the national Labs and the needs they identified.

QUESTION: Where do I find it here in the DWP?

ANSWER: You won't find it in the DWP, but it is talked in general on the roadmap.

QUESTION: Next year is requirements, this year we are accelerating the inventory?

COMMENT: Since inventory is a key major single component I would have thought it would have its own breakout.

RESPONSE: That is next year, under system assessment capability where we put together the long-range plan picture.

COMMENT: Something should be there showing what are the candidate sets of important things.

RESPONSE: That is what the inventory team is doing and continued analysis will be under the new work category. The assumption is that once key items are identified additional funds will be initiated mid-year. While we say that the DWP is a three-year look ahead, in reality it is a 6-8 months look ahead.

COMMENT: But we don't know how much they are going to cost, and if this becomes the key critical path, the money may not be there to do the work in the time frame it is needed.

QUESTION: Everyone understands the process, but another perspective is that this project started last November and this is the first of August. What I see is that this work culture cannot produce a concept, a technical approach or planning on how to begin on this problem. I can't help but wonder if there isn't something wrong with this work culture if we can't produce a one page block diagram. If nothing has happened to have an understanding on how we are going to approach this project between last November and now, what will happen in September to make us get there?

ANSWER: This Project started in January and February. We are a lot smarter than we were in January and February. This Project has been an evolutionary process. We hope we can move forward in quantum steps in the near future.

COMMENT: I'm concerned when looking at the DBS in the Detailed Work Plan that the lead block is not about an assessment at all. (Learning what the probable effects might be of what we might do or not do in collection of actions.) What I am looking at says integration of vadose zone activities. That to me says there is a disconnect in why this endeavor exists. It says we are going develop an assessment capability, but it doesn't say we are going to do an assessment. I don't mean to be picking at words, but I look at what I see and I see a failure to grasp why we are here. I am disappointed in what I see thus far. I have had a few hours to look at the workplan and only a few minutes to look at the Project Specification, and not withstanding the 6-8 months, I don't think we have the picture yet.

ANSWER: Clearly, what our management expectation is of the project and what it is all about is protection of the groundwater resources of the Columbia River and the lifestyles and cultures that use it. The assessment is important to do that work. But, It isn't just the assessment. What this project is about is to protect water resources. That is a big job and if we don't articulate that in the Project Specification then we haven't done our job very well.

QUESTION: So we have some new paper today, the words on the new paper are still using Groundwater and Vadose Zone where the real issues is on impact or receptors. I don't see anything that infers a regional assessment, which is necessary. Assessment Capability is the tool, but that doesn't mean we have some estimates to tell if the work that is going on around the site is the right work. I know there is culture to get over and change, what is the estimate on culture change to see meaningful words on paper?

COMMENT: There is a strong feeling that ultimately the assessment must drive the work. But the train left the station a long time ago. A lot of good work is going on and I see very little going on that isn't going to be of use. I'm willing to be more patient.

RESPONSE: Because of the credibility gaps I believe that some words get read into them more than what they mean. We are still learning what words are associated with credibility gaps.

COMMENT: Don't be sensitive to them because of what is being said here today. Be sensitive to them because it communicates to the work force what this thing is all about. If they aren't talking to you and hearing your clarifications then they are going to say that this project is about the vadose zone because that is what the words say.

COMMENT: When a box contains three or four words, someone should write a paragraph to define what they really mean to say, otherwise you may have to back fill and clarify what is meant.

COMMENT: I don't mean to pick at words, but I see a pattern and I wanted to comment on it.

QUESTION: The meetings next week on the DWP, are we invited?

ANSWER: They are all open meetings. We are going to work closely together to get through all the information Monday and Tuesday. Please allow the project engineers to get through all their information. We may need to write out our questions and concerns to communicate them because we need to be able to get through all the projects.

NOTE: **CHECK IT OUT!**
Groundwater/Vadose Zone Web Site Location: http://www.bhi-erc.com/vadose

ATTACHMENTS:
1) Agenda for DWP Meeting August 10-11
2) Agenda for HAB-ER Meeting August 13
2) National Laboratory Technical Meeting Minutes from July 16-17
3) National Laboratory Technical Meeting Minutes from July 22-23

ATTENDEES:

Stephanie Alt, DOE-RL
Martin Bensky, HAB
Dru Butler, BHI
Don Clark, JAI Corporation
Jim Conca, WSU/UFA
Dirk Dunning, Oregon Office of Energy
Bruce Ford, BHI
Owen Goodman, BHI
Dib Goswami, Ecology
Jim Hanson, DOE-RL
Mary Harmon, DOE-HQ
David Holland, Ecology
Tony Knepp, BHI
Fred Mann, TWRS
Katy Makeig, SMS, Inc.
Tom Page, PNNL
Tom Post, EPA
Wade Riggsbee, YIN
Casey Ruud, Ecology
R. Jeff Serne, PNNL
David Shafer, DOE-RL
Karen Strickland, BHI
K. Michael Thompson, DOE-RL
Dan Tyler, Freestone Env. Serv.
Tom Wintczak, BHI
Thomas W. Woods, YIN

ATTACHMENT 1
AGENDA

Detailed Planning Reviews – Groundwater/Vadose Zone & Core Projects
August 10 and 11, 1998
BHI Assembly Room, 3350 George Washington Way

Monday, August 10, 1998

1:30 PM – 1:45 PM
Introduction, Process and Schedule for Reviews — Rich Holten, Michael Hughes, & Scott Hajner

1:45 PM – 3:15 PM
Groundwater/Vadose Zone Project Review — Michael Graham

3:15 PM – 3:30 PM
BREAK

3:30 PM – End of Day
Groundwater Management
- Groundwater Remediation — George Henckel
- Groundwater Remediation — Ron Smith
- Vadose Zone Monitoring
- Modeling

Tuesday, August 11, 1998

8:00 AM – 8:15 AM
Introduction and Overview — John Peschong

8:15 AM – 9:30 AM
TWRS Vadose Zone Characterization — Janice Williams
Intermediate Low-Act Waste (ILAW)
Hanford Tanks Initiative (HTI)

9:30 AM – 10:15 AM
Environmental Monitoring — Roger Durkis

10:15 AM – 10:30 AM
BREAK

10:30 AM – 11:30 AM
200 Area Assessment — Greg Mitchem

11:30 AM – 12:00 PM
Closeout – Groundwater/Vadose Zone & Core Projects — Rich Holten
Comments, Actions, Path Forward

ATTACHMENT 2

Hanford Advisory Board

Environmental Restoration Committee Meeting

August 13, 1998
(Bechtel Bldg., Assembly Room, 3350 George Washington Way, Richland)

DRAFT Agenda

10:00 – 10:45 a.m.	200 Area B/C Cribs	Tom Ferns, DOE
10:45 – 11:15 a.m.	HRA EIS Land Use Plan Update	Tom Ferns, DOE
11:15 – 11:30 a.m.	1999 ER Performance Agreements	ER Committee
11:30 – 12:00	Committee Business - ER Committee FY99 Work Plan September Agenda/Date • ER Detailed Work Plan • River Sampling with Fish and Wildlife • 100B/C Verification	ER Committee
12:00 – 1:00 p.m.	Lunch	
1:00 – 4:00 p.m.	Groundwater/Vadose Zone Integration Project Project Update Tribal Government and Public Consultation Plan Report on Stakeholder Meeting (July 14) Committee discussion on potential advice	 Project Team ER Committee
4:00pm	Adjourn Meeting	

ATTACHMENT 3
HANFORD SITE GROUNDWATER/VADOSE ZONE INTEGRATION PROJECT
NATIONAL LABORATORY TECHNICAL MEETING
JULY 16-17, 1998

MEETING MINUTES

MEETING TIME: July 16, 1998, 1:00 – 5:00 pm
July 17, 1998, 8:00 am – 4:00 pm

MEETING LOCATION: Pacific Northwest National Laboratory
Environmental Molecular Sciences Laboratory
Conference Room 1077
3335 Q Avenue
Richland, WA 99337

PURPOSE: Identification of science and technology gaps related to important Hanford site projects

MEETING OBJECTIVES:

. Continue discussions by National Laboratories of science and technology issues associated with Hanford subsurface and the Columbia River.
. Provide information on programmatic drivers for Hanford Projects and the associated technical work planned for those projects.
. Identify areas of gaps in work needed to address previously identified issues.
. Agree upon major research themes for preliminary applied S&T initiatives

AGENDA: The full agenda is attached for information to these minutes (Attachment #1).

ATTENDEES: A listing of all attendees is attached for information to these minutes (Attachment #2).

SUMMARY OF THE MEETING:

Thursday, July 16, 1998: The Hanford Site Groundwater/Vadose Zone Integration Project conducted its second set of scheduled national laboratory technical meetings for program planning on July 16-17,1998. The meeting was opened at 1:00 pm with introductions and an overview of the meeting agenda. The focus of the meeting was to identify technical and programmatic gaps associated with technical program elements for the vadose zone (geohydrology and geochemistry), and the river. Participants included scientists from several national laboratories, including Lawrence Berkeley National Laboratory, Lawrence Livermore National Laboratory, Los Alamos National Laboratory, Oak Ridge National Laboratory, and Pacific Northwest National Laboratory.

Introductory remarks by Shirley Rawson described the efforts of the national laboratory planning teams in support of technical program planning and science/technology road-mapping for the Hanford Groundwater/Vadose Zone Integration (Attachment #3). She presented the approach to planning and outlined the purpose of several technical exchanges scheduled to occur throughout the remainder of the fiscal year. She also listed several of the science/technology (S/T) issues previously identified by the planning teams in earlier meetings (April 20-21, 1998 and June 24-25, 1998). The charge given to participants was to extract programmatic gaps from presentations by several major Hanford site projects and to use the information to identify areas for potential work to address the S/T issues.

Between 1:30 – 4:30 pm, several presentations were made by scientists from Hanford Site contractors about ongoing characterization and remediation activities on the Hanford Site. Areas of focus included EM40 Soil Assessment and Remediation Activities at the 200 area and the EM30 Tank Waste Remediation System (TWRS) vadose zone characterization activities (see attached agenda). Greg Mitchem (Bechtel Hanford Inc.) presented a description of the key milestones and drivers on the characterization and remediation of contaminated soils/sediment in the 200 area sites other than tank farms and discussed strategies for characterization of such sites (Attachment #4). He also made available a table summarizing characterization to date of vadose zone sites in 200 West Area and Gable Mtn. B Pond and Ditches (Attachment #5). Questions about the presentation led to the recognition of the high costs of characterization and the subsequent development of a strategy to collect similar waste site into groupings that optimize characterization efficiency. Mitchem distributed a limited number of copies of the Waste Site Groupings report that described the grouping strategy. The characterization plans are being developed between now and FY2008, while restoration is planned for completion by FY2018.

A team of scientists, led by Fred Mann (Fluor Daniel Northwest), presented information on the vadose zone needed to support the TWRS remediation decisions (Attachment #6). The approach of the team was to show the gaps identified by the TWRS program from three different perspectives: programmatic, data gaps analysis, and gaps identified by model simulations. Fred Mann presented a programmatic overview and approach to the TWRS vadose zone program plan (Attachment #7), and described the planned approach to TWRS characterization, surveillance, and model verification. He outlined proposed sampling areas for the initial TWRS characterization campaign to begin in FY1999, and indicated possibilities of using samples from the proposed boreholes to address both TWRS needs and possibly any additional S/T issues identified by the national laboratory teams for the Groundwater/Vadose Zone Integration Project.

Marcus Wood (Waste Management Hanford Company) presented the gaps for TWRS that had been identified from an assessment of existing data (see Attachment #6). The existing data were used to develop a conceptual model of past tank leaks and future spread of contamination, which was then used to identify further data needs. Important processes in the model included transient fluid flow for the initial leak, waste chemistry effects on soil hydraulic properties, long-term solute transport by infiltration, and chemical adsorption/desorption reactions. Gaps were grouped and ranked subjectively, and the analysis indicated that the most significant gaps included need for more certainty in the in-tank inventory of radionuclides, the distribution of

contaminants around the tanks, the projected transport pathways, and the temperature distribution in the contaminated zone.

Dave Nichols (Jacobs Engineering Group, Inc.) presented the results of a model simulation activity to support decision-making for retrieving the wastes from the single-shelled tanks, and for assessing what level of waste-retrieval losses of radionuclides to the environment, if any, could be tolerated (Attachment #6). The activity also assisted DOE in determining whether it was possible to proceed with decision-making for tank farm closure and what data were needed before proceeding with decision-making. A screening-level evaluation of retrieval performance (RPE) was made of transport beneath the 241-AX tank farm using a simple modeling tool to assess sensitivity probabilistically for several key radionuclides. The screening-level assessment had been reviewed by outside experts and regulators and was deemed appropriate for a systems-level approach to prioritizing analysis and data collection.

The afternoon was concluded with the charge to participants to begin to think about areas for proposing additional work based on identified gaps by the programs and previously identified issues. The kinds of information that were to be made available to the working teams included:

. Aggregate Area Management Reports
. RI/FS Report for the 200 BP operable unit
. Information on modeling approaches

National laboratory input was requested for:
. TWRS Characterization Plan for boreholes in FY99 and in the plan itself.
. TWRS data collection strategy—what measurements needed?

Friday, July 17, 1998: An opening discussion session in the morning focused on the links between the programmatic drivers (e.g. key site decisions on characterization, remediation, waste retrieval), and the key science issues to be solved to support such decisions. Mike Graham and Tom Wintczak (Bechtel Hanford Inc.) made available the Remedial Investigation Report for 200 BP1, several maps of planned release sites (e.g. cribs and ditches) in the 200 areas, and the Aggregate Area Management Reports for the Hanford Site. Chapter 5 of the 200 BP1 report which covered transport modeling of wastes beneath cribs was copied for the participants. They also made available a copy of a letter from the State of Washington Department of Ecology to the DOE-RL field office outlining requirements for a corrective action program to address releases to the environment at the 8 single shell tank farms at Hanford (Attachment #8). The letter contained an outline of the State's suggestions for a vadose zone characterization plan.

The breakout groups for the vadose zone (geohydrology and geochemistry) were charged with concentrating on coming to closure on key issues and identifying the kind of work that it would make sense to pursue to address those issues in conjunction with:

. TWRS Characterization boreholes
. Field tests/experimentation to understand transport, associated with leaking tanks or cribs

The breakout group for the river was charged with coming to closure on the list of key technical and scientific issues for the river that related to contaminant entry to the river, transport within the river, and sequestration within different food webs in the river system.

After several hours of breakout work, to support the development of field test planning, Susan Narbutovskih (PNNL) presented a summary of work that was conducted for EM50 with electrical resistivity tomography (ERT) at a mock tank leak experimental site in the mid 1990s. After her talk, the geohydrology and geochemistry breakout groups met together to discuss how to address coupled physical and chemical processes in designing field experimentation sites.

At the end of the breakout sessions, progress reports from the different session leaders were given:

Geohydrology (Glendon Gee)– A synthesis of S/T needs was compiled by group leader Don DePaolo (who was unable to attend), based on efforts from the earlier meetings (Attachment #9). Discussion focused on test site selection, which yielded a list of potential test sites, including piggybacking infiltration tests on the extension of the Environmental Restoration Disposal Facility (ERDF). The group ruled out working at highly contaminated sites initially. A list of the group's suggested tests is attached (Attachment #10).

Geochemistry (John Zachara) – Discussion focused on the science to be conducted in conjunction and support to the TWRS borehole characterization effort. A list of planned analyses was provided by Jeff Serne (PNNL) as a starting place for identifying additional analyses and experiments. A list of questions and approaches was generated (Attachment #11).

Columbia River (Roger Dirkes) – A list of science issues and kinds of analyses needed to address the issues was developed. Siting field test sites near the river was suggested as a means to address some of the issues pertinent to both the geohydrology and the river technical program elements.

Public comments were presented by Dirk Dunning (State of Oregon). He pointed out the extreme importance of the Columbia River as a resource to the residences of both Oregon and Washington that lived downstream of the Hanford site. He described the uncertainties associated with inventory records on the site and indicated the need for accurate characterization of the amount of the potential contaminant impact to the river. He asked the group to take seriously the need for an improved approach to evaluating systems-wide impacts of the Hanford site.

Closing discussion touched on opportunities in addition to those outlined for the TWRS characterization boreholes. Mike Thompson (DOE-RL) indicated that RCRA monitoring wells are currently being installed on the Hanford site and could be the source of samples. He took an action to make available a location map of those boreholes. Dave Olsen (DOE-RL) mentioned that there will be additional excavations associated with the ERDF in the 200 area which could be used to conduct short-term infiltration studies mentioned by the Geohydrology group. He took an action to provide information on the excavation schedule. Information on the cribs associated with 200 BP1 will be made available to the leaders of the geohydrology and geochemistry groups for additional thinking on design of field infiltration test sites.

A list of actions is included below.

ACTIONS FROM THE MEETING:

General Actions
Collect and distribute:

- background information on hydrogeology and characterization data for 200 BP1 and SX 109
- Look into leveraging ERDF for infiltration tests
- Examine possibility of piggybacking on RCRA boreholes
- Examine possibility of piggybacking on retrieval of SX 109 extension for side-coring

NOTE: Attachments referenced in the above meeting minutes can be obtained by calling Karen Strickland at (509) 372-9236.

ATTACHMENT 4
NATIONAL LABORATORY TECHNICAL MEETING
JULY 22-23, 1998

MEETING MINUTES

MEETING TIME: July 22, 1998, 1:00 – 5:00 pm
July 23, 1998, 8:00 am – 4:00 pm

MEETING LOCATION: Pacific Northwest National Laboratory
Environmental Molecular Sciences Laboratory
Conference Room 1077
3335 Q Avenue
Richland, WA 99337

PURPOSE: Identification of significant scientific issues for inventory and groundwater technical program elements

MEETING OBJECTIVES:

. Continue discussions by National Laboratories of vadose zone/groundwater issues associated with Hanford subsurface and the Columbia River.

- initiate examination of scientific issues associated with effects of Hanford contaminants on groundwater quality and on issues associated with the source term and inventory of contaminants in the subsurface
- determine approach to addressing scientific issues affecting inventory and groundwater

. Assess status of conceptual model for the inventory and groundwater technical elements.
. Initiate discussion of approach to solving key issues and outline types of studies needed.

AGENDA: The full agenda is attached for information to these minutes (Attachment #1).

ATTENDEES: A listing of all attendees is attached for information to these minutes (Attachment #2).

SUMMARY OF THE MEETING:

Wednesday, July 22, 1998: The Hanford Site Groundwater/Vadose Zone Integration Project conducted its second set of scheduled national laboratory technical meetings for program planning on July 22-23,1998. The meeting was opened at 1:00 pm with introductions and an overview of the meeting agenda. The focus of the meeting was to identify scientific and technical issues associated with technical program elements for the groundwater and the inventory (source terms), and define approaches to the solution of these issues. Participants included scientists from several national laboratories, including Lawrence Berkeley National

Laboratory, Los Alamos National Laboratory, Sandia National Laboratory, Savannah River Technology Center, and Pacific Northwest National Laboratory.

Introductory remarks by Shirley Rawson described the efforts of the national laboratory planning teams in support of technical program planning and science/technology road-mapping for the Hanford Groundwater/Vadose Zone Integration (Attachment #3). She presented the approach to planning and outlined the purpose of several technical exchanges scheduled to occur throughout the remainder of the fiscal year. She also listed several of the science/technology (S/T) issues previously identified by the planning teams in an earlier meeting (April 20-21, 1998). The charge given to participants was to add to previously identified science and technology issues based on a series of presentations about issues associated with groundwater and inventory, to define approaches to resolving these issues, and to use the information to begin to identify areas for potential work to address the S/T issues.

Between 1:30 – 4:30 pm, several presentations were made about ongoing characterization and modeling efforts associated with the inventory of wastes associated with tanks, liquid disposal sites, solid waste burial sites, and other areas on the Hanford Site.

Charley Kincaid (PNNL) discussed the need for a systems model to guide decisions affecting the vadose zone, groundwater, and Columbia River (Attachment #4). His presentation emphasized lessons learned about scientific issues associated with the radiological inventory from an earlier composite analysis conducted to meet the Defense Nuclear Facilities Safety Board Order 94-2. He described the need to understand impacts related to super-imposed plumes and the challenges of obtaining optimal inventory/source term data for multiple types of sites, including solid waste burial grounds, tanks (both leaking and potential leak losses due to waste retrieval), liquid waste discharge sites, buried reactor cores, and commercial low-level wastes. He indicated that additional areas on the Hanford site which provide some source of radiological material to a performance assessment (e.g. canyon buildings, uninventoried liquid discharge sites) were not included in the early composite analysis and require further information on the types and amounts of associated inventories. He also enumerated sources of inventory data at Hanford. Finally, he pointed out those areas where the initial composite analysis suggested there were key uncertainties, tied to both lack of information on inventory and uncertainty about important processes. Among the lessons learned was the need for the use of accepted conceptual models of transport and reaction of contaminants, as well as quantified uncertainties in input parameters for models.

Steve Agnew (LANL) presented results of his work on comparing historical process estimates with tank waste assays (Attachment #5). He described the Hanford Defined Waste Model, version 4, and the strategy underlying the design of the model. He went into detail on how each of the modules of the model worked and how the approach allowed the inclusion of important processes and tank fractions (e.g. supernatant, tank solids) in the computations. He addressed where the input data was derived for radionuclide source terms and the scientific issues associated with development of the source term from processes. He outlined different designations for the wastes at different tank farms and talked about groupings of process chemistry. Results of the model were compared to assayed concentrations of wastes.

Ron Smith (PNNL) gave a brief overview of the Hanford Groundwater Monitoring Program (Attachment #6) . He described the current groundwater monitoring well network and the physical characteristics of the aquifer, and showed the nature of the groundwater table fluctuations due to liquid discharges between 1944 and 1979. He presented graphs showing the nature and extent of major radionuclide and hazardous chemical groundwater plumes across the site, with detail for the 200 areas. Finally, he listed some of the scientific issues associated with groundwater monitoring and the programmatic approaches that are being taken to address those issues.

Vern Johnson (PNNL) presented information on the entry of solutes and water into the groundwater from the vadose zone, focusing on a set of observations of the vertical variation of groundwater chemistry with depth below the water table in pristine and contaminated parts of the aquifer (Attachment #7). He compared results obtained from a pristine site with a passive multilevel sampler to results of samples collected at discrete depth intervals beneath the SX tank farm. He presented a conceptual model of either crib or tank leak migration into the groundwater system, and the implications for groundwater chemistry dependent on the two different infiltration scenarios. The results were used to highlight some scientific issues about the variation in plume chemistry with depth within the Hanford unconfined aquifer.

Chris Murray (PNNL) presented results of a geostatistical simulation of the Hanford groundwater monitoring network that is being developed to assist scientists in selecting the optimal set of monitoring wells for continued monitoring. Marcel Bergeron gave a presentation on the current approaches to site-wide groundwater modeling (Attachment #8). He talked about previous groundwater models used on the site (e.g. 2-d conceptualizations of flow with 1-d streamtube approaches to transport) and outlined the history of the Hanford Sitewide Groundwater Remediation Strategy, the Hanford Groundwater Project, and the Hanford Composite Analysis, which all have contributed to the development of the current detailed model of three dimensional flow and transport at Hanford. He outlined the hydrostratigraphy that underlies the model and mentioned specific boundary conditions hat have been used in the current conceptual model. He pointed out ways in which the flow model was developed and calibrated based on varying flow conditions and parameterizations of the hydraulic conductivity fields. He presented some examples of model applications for the change in water table elevation and the transport of selected radionuclide plumes. Predictive use of some of the models pointed to areas where additional science may be needed to confirm or validate assumptions.

The afternoon was concluded with the charge to participants to begin to think about combining those Hanford-specific scientific issues areas identified in the presentations with issues previously identified at earlier meetings.

Thursday, July 23, 1998: An opening discussion session started with a description of the current project planning that the meeting was supporting, and instructions to the participants. Breakout groups were asked to confirm the conceptual model for their technical program element, to reach agreement on the key scientific issues requiring more data and information, and to suggest approaches to how such information could be collected. Breakout groups were made aware of the technical approach formulated by the earlier meeting on July 16-17,

1998, to focus on selected problem sets regarding tank wastes and liquid discharges from cribs.

Breakout sessions were reconvened in the early afternoon for an issues closeout session. The sessions had concentrated on issues identification and ideas for approaches to addressing the issues.

Groundwater (Brian Looney) – The group had worked from previous efforts (draft material from April 20-21, 1998 technical meeting) and had expanded the meeting to develop a statement of problem, important features of the conceptual model, and a series of key issues with associated characterization needs. An attachment (Attachment #9) summarizes the group's findings.

Inventory (Steve Agnew) – The group identified multiple issues associated with inventories and source terms of contamination. The need for information management was pointed out as a cross-cutting issue for multiple technical program elements. A discussion was held about what might constitute a short-list of key contaminants, given that each site process was associated with a different set of contaminants. The group had examined the relative need for looking at reactor discharges to the river as part of a greater site-wide mass balance issue. A summary of key issues is attached (Attachment #10).

Public comments were made by Marty Bensky, who stressed the importance of looking at the mechanisms involved in failure of waste containment (e.g. tanks, barrels) as part of the inventory program element, and by Don Clark, who reiterated the need to look at issues from a dose/systems approach, since the public wants to know what the potential dose could be.

Final discussion focused on the kinds of information that are needed by participants for the next meeting. Lists of information needs were generated by the groups, and are shown below as actions.

ACTIONS FROM THE MEETING:

Groundwater group:
Provide information on:

- Baseline (pristine) Geochemistry Site at the Yakima Barricade Borehole
- CO18H facility
- Geophysics studies at Hanford
- Notes from Vadose zone geohydrology and geochemistry groups
- Most recent Environmental Surveillance report

Inventory group:
Provide information on:

- Summary from HEDR report/reactor discharges
- T-106 Tank Leak Report
- SX Vadose Zone Report from MacTec
- Beard 1967 report on SX tanks

For both groups:
Provide information on:

- Proposed RCRA well sites and hydrogeologic information

NOTE: Attachments referenced in the above meeting minutes can be obtained by calling Karen Strickland at (509) 372-9236.

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